

WHAT IS CLAIMED IS:

1. A record/play apparatus for extracting and searching index information simultaneously from broadcast signals, comprising:

- a tuner for selecting a demanded channel from received broadcast signals;
- a record control part for controlling storage/play of a media stream of the selected channel;
- an indexing engine for extracting index information from the media stream;
- a storage device for storing the media stream inputted from the play control part and the index information extracted from the indexing engine;
- a search/browsing engine for carrying out search/browsing in accordance with a non-linear multimedia access demand from a user using the stored index information; and
- a main control part for controlling an entire flow of data and a control signal by receiving a command/control of the user and producing a required control signal.

2. The record/play apparatus of claim 1, wherein the record control part further comprises:

- an encoder for converting an analog stream or an uncompressed data stream into a compressed digital stream and outputting the compressed digital stream to the indexing engine;
- and
- a storage control part for storing the compressed digital stream in the storage device.

3. The record/play apparatus of claim 1, wherein the main control part further comprises:

- a input interface for receiving an input of the user;
- a controller for processing the index information and producing a control signal for required part in accordance with the index information and the input of the user when index information is inputted from an external source;
- a decoder for converting the compressed stream stored in the storage device into an uncompressed stream and outputting the uncompressed stream; and

a display control/interface for receiving the uncompressed stream and transferring the uncompressed stream to a display device.

4. The record/play apparatus of claim 3, wherein the main control part further comprises a separation module for separating the index data from the media stream when the index information is inputted from the tuner with the media stream.

5. The record/play apparatus of claim 1, wherein the main control part, when a partially-compressed stream is required for the indexing engine, controls the record control part in a manner that the indexing engine is provided with the partially-compressed stream.

6. The record/play apparatus of claim 1, wherein the main control part provides the indexing engine with an uncompressed stream by controlling the record control part.

7. The record/play apparatus of claim 1, wherein the index information extracted from the indexing engine is meaningful/structural/temporal information of multimedia content.

8. The record/play apparatus of claim 7, wherein the indexing engine, based on the extracted index information, stores summary information, key frame information, key region information in connection with the entire temporal information.

9. The record/play apparatus of claim 7, wherein the meaningful information of the multimedia content extracted from the indexing engine is described in a manner that appearance and disappearance of an object, occurrence and end of an event, variance of a setting, state change of the object are connected to the temporal information.

10. The record/play apparatus of claim 7, wherein the structural information of the multimedia content extracted from the indexing engine includes structural information of the multimedia stream such as scenes and shots.

11. The record/play apparatus of claim 7, wherein the search/browsing engine provides information required for the user to be able to select a part to be transferred in the multimedia content stored in the storage device based on the index information.

12. The record/play apparatus of claim 1, wherein the search/browsing engine provides summary information of the multimedia content selected by the user based on the index information stored in the storage device.

13. A method for extracting and searching index information simultaneously from broadcast signals, comprising:

selecting a demanded channel from received broadcast signals;
controlling storage/play of a media stream of the selected channel;
extracting index information from the media stream;
storing the media stream inputted from a play control part and the index information extracted from an indexing engine;
carrying out search/browsing in accordance with a non-linear multimedia access demand from a user using the stored index information; and
controlling an entire flow of data and a control signal by receiving a command/control of the user and producing a required control signal.

14. The method of claim 13, wherein the step of controlling the storage/play of a media stream further comprises:

converting an analog stream or an uncompressed data stream into a compressed digital stream and outputting the compressed digital stream to the indexing engine; and
storing the compressed digital stream in the storage device.

15. The method of claim 13, wherein the step of controlling an entire flow of data and a control signal further comprises:

receiving an input of the user;

processing the index information and producing a control signal for required part in accordance with the index information and the input of the user when index information is inputted from an external source;

converting the compressed stream stored in the storage device into an uncompressed stream and outputting the uncompressed stream to a display control/interface; and
transferring the uncompressed stream to a display device.

16. The method of claim 15, wherein the step of controlling an entire flow of data and a control signal further comprises separating the index data from the media stream when the index information is inputted from the tuner with the media stream.

17. The method of claim 13, further comprising: when a partially-compressed stream is required for the indexing engine, controlling the record control part in a manner that the indexing engine is provided with the partially-compressed stream.

18. The method of claim 13, wherein the step of controlling an entire flow of data and a control signal further comprises providing the indexing engine with an uncompressed stream by controlling a record control part.

19. The method of claim 13, wherein the index information extracted from the indexing engine is meaningful/structural/temporal information of multimedia content.

20. The method of claim 19, wherein the indexing engine, based on the extracted index information, stores summary information, key frame information, key region information in connection with the entire temporal information.

21. The method of claim 19, wherein the meaningful information of the multimedia content extracted from the indexing engine is described in a manner that appearance and disappearance of an object, occurrence and end of an event, variance of a setting, state change of the object are connected to the temporal information.

22. The method of claim 19, wherein the structural information of the multimedia content extracted from the indexing engine includes structural information of the multimedia stream such as scenes and shots.

23. The method of claim 19, wherein the step of carrying out search/browsing in accordance with a non-linear multimedia access demand from a user further comprises providing information required for the user to be able to select a part to be transferred in the multimedia content stored in the storage device based on the index information.

24. The method of claim 13, wherein the step of carrying out search/browsing in accordance with a non-linear multimedia access demand from a user further comprises providing summary information of the multimedia content selected by the user based on the index information stored in the storage device.